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**The Crucial Role of the Micro Caregiving Environment: Factors Associated with Attachment styles in Alternative Care in Chile**

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*Doi:*

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## **Abstract**

The distribution of attachment styles has been shown to differ between groups of children living with their parents and children placed in alternative care (AC), defined as residential or foster. However, this is the first study in Latin America to explore possible factors affecting the quality of attachment in children living in both residential and foster care. Two groups of children (N = 57) were compared: one group living in Residential Homes (RC) and the other in Foster Care (FC) in Chile. Children's, caregivers' and structural factors (e.g., child: caregiver ratios) and their links with attachment styles were investigated. The micro caregiving environment (i.e., the specific individual child caregiver relationship), especially the caregivers' engagement, sensitivity, disciplinary control and affection, as well as some structural factors (i.e., child: caregiver ratios), were linked to attachment security in children. Specifically, better emotional caregiving and lower child-caregiver ratios were associated with higher rates of secure attachment. The association between quality of care (as measured by the HOME inventory) and attachment styles seems to be influenced by caregiver relationships (as measured by CCSERSS). Caregiver relationship factors (i.e., affection, engagement and sensitivity) directly impact the quality of the attachment children establish with them while living in AC. However, the relationships that caregivers establish with children under their care can be facilitated by good quality structural factors, particularly child-caregiver ratios.

**Keywords:** Alternative Care, Attachment, Foster Care, Residential Care, Caregivers, Sensitivity.

## **Introduction**

An emergent body of research in attachment is being conducted with children living in alternative care (AC) settings, both RC and FC. Initial studies in this field focused on adoption post institutional care, but attention is now moving to the attachment children establish with their residential and foster caregivers while still living in these alternative care settings. Outcomes for children living in both RC and FC, in terms of the quality of attachment to their caregivers, have been linked with child, caregiver and structural factors. However, these factors have not been studied together in a single sample of children; rather they have been considered in separate studies conducted with different samples, some in RC and others in FC, exploring one or two variables each (see Garcia Quiroga, & Hamilton-Giachritsis, 2015 for detailed analyses of the factors previously studied). Therefore, the aim of this study was to explore the links between different attachment styles in two groups of children living in AC (RC and FC) and three groups of variables (i.e., child, caregiver, and structural factors) within one country.

### **Factors associated with attachment style**

Initial studies suggest that factors associated with attachment style seem to differ between AC settings. For example, younger age at placement (*child factors*) has been found in previous studies to be linked with attachment security in FC, but not in RC (Ponciano, 2010; Smyke, Zeanah, Fox, Nelson, & Guthrie, 2010). However, the critical age in FC for better outcomes was 24 months, yet the studies of RC tend to have samples aged younger than 24 months. Hence, the lack of association may be methodological, rather than actual. Indeed, a recent meta-analysis found that placement before 12 months is a moderating factor for attachment disorganisation in these settings (Lionetti, Pastore, & Barone, 2015).

Association between attachment security and length of time in placement has been found to be affected by the quality of care provided. Longer time spent living in good quality RC is linked with higher rates of secure attachment styles (Howes & Segal, 1993), while longer time in low quality RC linked with lower security (Vorria et al., 2003). In terms of gender, no significant differences between boys and girls living in AC are reported. However, gender seems to have a specific moderating role in the response to change of placement (i.e., FC after RC), with more girls developing a secure attachment after placement than boys (McLaughlin, Zeanah, Fox, & Nelson, 2012). Finally, adoption status has been linked to attachment security in FC settings with those children going on to be adopted more likely to develop a secure attachment (Ponciano, 2010). In contrast, contact with biological parents has been linked with attachment insecurity (Ponciano, 2010).

Regarding *caregiver's characteristics* some factors have been linked with attachment quality in several studies, mainly in FC settings. For example, caregivers' sensitivity has been linked to higher rates of attachment security both in RC (Howes & Segal, 1993) and FC (Ponciano, 2010). A caregiver's childhood trauma, motivations for fostering (e.g., spiritual expression, replacement of a grown child and desire to adopt) and experience as a caregiver have been linked with higher rates of insecure attachment styles in children, while caregivers' autonomous/secure state of mind was linked to more secure attachment styles in children.

In the final domain (*structural factors*), quality of caregiving and organisation of the home environment and learning materials have been linked to security of attachment both in RC (Zeanah, Smyke, Koga, & Carlson, 2005) and FC (Cole, 2005). The number of children living at the foster home was explored by Ponciano (2010), with fewer children in the placement facilitating the development of a higher number of secure attachments amongst them; no study in RC has considered this factor.

A very interesting intervention study conducted in orphanages considered structural changes (to promote stability of caregiving figures and a low number of children in each group) and caregivers' training in promoting warm, sensitive contact with children; it reported significant, stable improvements in several outcomes for children, including more organised attachment behaviours (Groark & Mc Call, 2011). A similar intervention was conducted with regular staff in a Latin American orphanage to promote warm, sensitive and responsive caregiver-child interactions. Children had a significant improvement in their outcomes after four months of exposure to the intervention, children who were transitioned to an older ward improved less than those who remained in the same group, suggesting the importance of stability in caregiving particularly when sensitive interactions are held (McCall et al., 2010).

Thus, the aim of this study was to explore the links between different attachment styles in children living in RC and FC (in one country) and each of these groups of variables (i.e., child, caregiver and structural factors).

## **Method**

This paper presents findings from one aspect of a broader study on attachment in AC in Chile. The wider study sample included 17 residential homes and five foster care programmes (see Garcia Quiroga, Hamilton-Giachritsis, & Ibañez, in submission), and explored attachment rates in RC, FC and parental care. This paper develops those findings, focusing on the two AC settings and considers factors associated with attachment styles – first in AC as a whole, and then the two groups separately.

## **Ethical approval**

The STEM ethics committee, University of Birmingham (ERN 13-1187/131187A) gave consent for this study. Local approval was obtained in Chile: for RC, from each manager or management team; for FC, from the regional Children's Service. Details of the

ethical procedures are listed below in detail, but related to maintaining confidentiality, informed consent, right to not participate and ensuring the child's welfare was paramount.

### **Sample**

The total sample considered in this paper consisted of 57 children and 45 caregivers. Of the 57 children, 36 (63.15 %) were living in RC and 21 (36.84%) in FC. Children's ages ranged from 3 to 7 years old ( $M = 64.12$  months,  $SD = 14.199$ ), 32 of them (56.1%) were girls and 25 (43.9%) boys. No significant differences between the two groups were found in terms of current age, gender, number of previous placements or time in placement; however, FC children were younger at first placement, possibly reflecting the national trend to prioritise younger children for any FC placements available. For the AC group as a whole, average time in current placement was 22.28 months ( $SD = 12.06$ ), 32.5% had previous placements, with an average of 1.38 previous placements ( $SD = .57$ ) and mean age at first placement of 32.64 months ( $SD = 20.31$ ).

Of the 35 caregivers, 16 (35.5%) were foster carers and 29 (64.4%) worked in residential care; all were female; ages ranged from 30 to 75 years ( $M = 51.52$ ,  $SD = 12.59$ ); and with 0 to 32 years working as a Caregiver ( $M = 9.70$ ,  $SD = 9.05$ ,  $Md = 7$ ) with different patterns in RC (50% had been working as caregivers for 6 to 12 years) and FC (36.9% had been working for 3 years or less and 37% for 12 years or more). The majority of caregivers (52.7%) had only school level studies (8.8% primary and 43.9% secondary), 35.1% had some type of technical education and 12.3% had a university degree. In FC, 86.7% of the caregivers had experienced breakdown in placements at least once.

### **Measures**

Three groups of factors were explored and are reported in this paper: factors related to the quality of care provided, factors related to characteristics of the children's history and factors related to caregivers' characteristics. The following measures were used:

***Attachment Story Completion Task (ASCT; Bretherton, Ridgeway, & Cassidy, 1990).*** Attachment representations were assessed using the ASCT, which is a video-recorded doll play procedure where a set of incomplete stories are presented for the child to relate an ending. Each of the stories is related to an attachment-relevant topic, such as failure, hurt, fear, separation and reunion. Full details of this procedure can be found in chapter 6. In summary, a modified ASCT has been used in institutional settings, with coding completed using the Story Completion Cards (CCH) system (Miljovitch et al., 2003) and based on the child's narrative, behaviour and responses. *Classifications* can be obtained for the four main attachment scales for security, deactivation (avoidance), hyperactivation (anxiety/ambivalence) and disorganisation of attachment representations, or can be analysed as a continuous model based on the *scores* in each sub scale. Reliability for the four attachment subscales is very good (intra-class coefficients of .94, .94, .85, and .90; Miljkovitch et al., 2004). In the current study, inter-rater reliability for attachment classification was assessed and classified as good (Kappa = .75).

***Questionnaire for Caregivers.*** Demographic details (child and carer) were collected, as well as reasons and details about current placement, previous placements, adoption status and child's contact with biological parents. Carer age, number of years working as a caregiver, level of training and beliefs about attachment were also collected.

***Motivations to Foster Inventory (MFPI; Yates, Lekies., Stockdale, & Crase, 1997).*** This inventory includes 10 Likert-type items (self-reported), assessing the initial reasons for becoming a caregiver (i.e., desire to help vulnerable children, financial benefits, increasing family size, community concern, supporting children with special needs, companionship, religious/spiritual expression, desire to adopt, replacement of an own child that has grown up and company for own child). It has been used in studies conducted in Australia, U.S.A and other countries. A study with 313 participants showed that 20 of 35 inter items correlations



were .20 or below and only 4 at or above .30. Alpha value for inventory was .64 (Touliatos, Perlmutter, & Strauss, 2001).

***Revised Adult Attachment Scale (Collins, 1996) – Close Relationships Version (AAS).*** The AAS was included as a measure of the caregiver's attachment style. This is an 18-item, self-reported, Likert scale, modified from the original scale developed in 1990 to include information not only on romantic relationships but on close relationships in general. The scale measures adult attachment styles on three subscales (Closeness, Dependency and Anxiety) which can be classified according to the combination of high or low scores, into Secure, Preoccupied (or Ambivalent), Dismissing (or Avoidant) and Fearful (or Disorganised). The scale has been adapted to the Chilean population (Fernández & Dufey, 2015) with good validity and reliability (Cronbach's alpha: .73 for Closeness subscale, .80 for Dependency and .87 for Anxiety). This is consistent with previous reports of Cronbach's alpha coefficients of .69 for Closeness, .75 for Dependency and .72 for Anxiety (Collins & Read, 1990).

***Observation for Measurement of the Environment (HOME) Inventory, Child Care – Early Childhood version (Caldwell & Bradley, 1984).*** This measure provides a general score of care quality (a higher score indicates better care). The Early Childhood HOME (HOME-EC) consists of 55 items in eight subscales for specific components of care (i.e., learning materials, language stimulation, physical environment, responsiveness, academic stimulation, modelling, variety and acceptance). It focuses on measuring the quantity and quality of stimulation available in the child's home environment and has been adapted to group care (Child Care version). It has also been used with high risk samples in several countries. Inter-observer agreement in several studies is evaluated at .80 or above, and presents convergent validity with other similar measures ( $r = .18$  to  $r = .69$  in the different subscales, all correlations significant at  $p = .05$ ; Bradley, Caldwell, & Corwyn, 2003).

***Caregiver-Child Social/Emotional and Relationship Rating Scale (CCSERRS;***  
***McCall, Groark, & Fish, 2010).*** This observational scale for measuring the Child-Caregiver relationship was specially designed to measure the quality of interactions in institutional (orphanage) settings; it can also be used to rate parents and caregivers at home. The scale focuses on socio-emotional interactions during three different situations: feeding, bathing and free play in several observation periods. It provides four caregiver measures (caregiver engagement, caregiver/child-directed behaviours, behavioural control and caregiver affection) and three child measures (child engagement, child affection and the child relationship with the caregiver). It can be used for caregivers with children aged up to approximately 6 years old. The scale has shown good reliability (agreement between raters either identical or within one point of .90) and validity in different contexts. It has been used in low and high quality orphanages in different countries, including some in Latin America (McCall, Groark, & Fish, 2010).

## **Procedure**

All Children's Homes in the two regions of the country that house the greatest number of homes were invited via e mail to participate in the wider study. Contacts were made with those willing to participate and questionnaires for Managers were sent as part of the wider study. Having been recruited into the wider study, eight of the Children's Homes met the eligibility criteria (i.e., had the correct age children, for a minimum period of six months living in current placement and without major disabilities) and were invited to participate in phase II; all eight agreed to take part. Visits were conducted in order carry out interviews and observations. Consent was obtained from the children's parents, caregivers or person who held parental responsibility. All children who met the inclusion criteria and were present at the time of the visits were included in the study.

For the FC group, local Children's Services in the region with the most FC programs were contacted. FC agencies are run by different NGOs, certified, financed and supervised by the National Children Service, each covering a different geographical area. Having obtained the approval, five of the seven FC agencies located in this region (with a total number of 595 children) were selected according to the number of non-kinship foster carers they had (usually around 20% of the total number of children), and were then contacted via e mail and phone calls to invite them to participate, all of them agreed to participate. Following this individual foster carers with children that met inclusion criteria (i.e., 3 to 7 years old, no severe disability and at least 6 months in placement) were given information about the study (i.e., general description, procedures, and confidentiality) via the telephone and a time for a visit was agreed. Visits were held in the caregiver's home at a convenient time and when the child was present. During these visits, questionnaires, interviews and observations were conducted, including assessment of the child in the presence of the main caregiver. Again, consent was obtained from the children's caregivers or person who held parental responsibility after reading the information sheet and signing consent form.

Observations took 2 to 3 hours per visit. During these visits, quality of care (HOME inventory) and child-caregiver relationship (CCSERRS) were assessed based on the observation of free play, feeding and other rudimentary activities. In addition, during a caregiver interview, the measures were completed. Children's attachment styles were assessed using the ASCT, completed in their own home (residential or foster) and video-recorded. These assessments were completed by the first author and a research assistant, then coded by the first author and one third double-coded by a researcher at the University of Barcelona (blind to the initial coding). Inter-rater reliability of attachment classification was good (Cohen's Kappa;  $\kappa = .75, p < .005$ ).

### **Treatment of data**

Power analysis for this study was conducted with G\*Power software. For chi-square 6df and 2df (Faul et al., 2008), Anova for 3 groups for attachment classifications (Faul et al., 2013) and Multiple Regression with 4 predictors for security in attachment, using an alpha of 0.05 and a power of 0.80 (Faul et al, 2013). The desired sample size in order to detect medium size effects ranges from 64 to 159 depending on the statistic, and for large size effects from 21 to 66 participants. This study had 57 participants and hence could potentially detect large effects.

Regarding data analysis, preliminary testing was conducted to check assumptions of normality, linearity, homogeneity of variance, multicollinearity and checking for outliers. No serious violations were noted for CCSERRS, ASS, Beliefs inventory and age at first placement; for other variables, some assumptions were violated and non-parametric statistics were preferred. A chi-square test for independence was conducted to explore associations with four categories of attachment, however this was invalid due to number of cells with fewer counts than expected. Avoidant and Ambivalent categories were therefore merged in an “Insecure” category and associations between caregivers’ attachment style, beliefs and motivations and these three categories were then calculated with chi-square test for independence. A one-way between groups analysis of variance (ANOVA) was conducted to explore the differences in the caregiver’s relationship scale (CCSERSS) between types of child’s attachment style (measured by ASCT-CCH). A Bonferroni adjusted alpha level of .01 was used when multiple comparisons were conducted for different subscales. Correlations were conducted in order to explore the association between attachment scores and children’s factors (current age, number of previous placements, and age at placement) and caregivers’ factors (CCSERSS, caregiver’s age and ratios). A multiple regression was conducted in order to explore the contribution of four variables (HOME score, CCERRRS score, number of children per caregiver and caregiver’s experience) in explaining the variance in attachment security scores in children.

## Results

### Children's Factors

Nearly half of the children (43.9%) had a history of at least one previous placement; of these, 63.6% had been placed in RC, 31.8% in FC and 4.5% had previously experienced both types of placements. Overall, 57.9% of children did not have contact with their biological parents. However, only about a quarter (28.6%) were in the process of being adopted. Children in RC had attachment styles that were classified 36.1% secure, 27.8% Avoidant, 11.1% Ambivalent and 25.0% Disorganised, for FC children the attachment *classifications* were 42.9% Secure, 14.3% Avoidant, 28.6% Ambivalent and 14.3% Disorganised (see chapter 5 for details). Age at placement, reason for placement, previous placements and time in placement were explored as possible factors related to attachment style but no significant differences were found in these factors across different attachment *classifications*, nor associations between these variables and attachment *scores*.

For the group as a whole, there was a medium positive correlation between child's current age and security *scores*,  $r = .39$ ,  $n = 57$ ,  $p = .003$ ; but when the two care groups were analysed separately this correlation remained significant only for RC,  $r = .59$ ,  $n = 36$ ,  $p = .000$  (for FC,  $r = .10$ ,  $n = 21$ ,  $p = .655$ , *n.s*). Also, age at placement was significantly (positively) correlated with security *scores* for the RC group,  $r = .39$ ,  $n = 33$ ,  $p = .023$  not the FC group,  $r = .00$ ,  $n = 20$ ,  $p = 1.0$ , *ns*.

### Caregivers' Factors

**Caregivers' Attachment Style.** The majority of caregivers (66.7%) had a secure attachment style, which corresponds with general population studies in different countries. The relationship between caregivers' and children's attachment styles was explored. In four

categories of children's attachment style (Avoidant, Secure, Ambivalent and Disorganised), chi square could not be conducted due to the cell count assumption. The groups were collapsed into three (Secure, Insecure and Disorganised) attachment categories and no significant difference in caregivers' attachment style between groups was found. There was no significant association between attachment style in children and attachment style in caregivers ( $\chi^2 (1, n=53) = .20, p = .65, ns.$ ) as a whole, or when analysed separately by care group.

***Number of years working as a caregiver.*** The number of years caregivers had been dedicated to that activity ranged from 0 to 32 ( $M=9.7, SD=9.055$ ), with a higher number of years in the FC group ( $M=11.57$ ) than the RC group ( $M=8.61$ ). The relationship between Caregivers' years of experience and children's attachment style was explored; a Mann-Whitney U Test revealed a significant difference in the number of years working as a Caregiver in Secure children ( $Md=3, n=22$ ) and Not Secure (i.e., insecure or disorganised) children ( $Md=8, n=35$ )  $U= 247.500, z= -2.265, p=.024, r=.30$  (medium size effect), with more experienced caregivers having a greater number of children with a Not Secure attachment style.

***Caregiver's age.*** The caregivers' ages ranged from 30 to 75 years ( $M=51.52$ ). The relationship between caregiver's age and attachment security *scores* was investigated using a Spearman correlation coefficient. There was a negative correlation between the two variables ( $\rho = -.56, n=21, p=.008$ ), with older caregivers associated with low scores in the child's attachment security, this was possibly confounded with years of experience, as older caregivers were generally also more experienced.

***Caregivers' beliefs about attachment.*** A Mann-Whitney U Test revealed no significant difference in caregiver's attachment beliefs (as measured by total scores in the

beliefs inventory) in Secure ( $M=25.25$ ,  $n=22$ ) and Not Secure ( $M=31.36$ ,  $n=34$ )  $U=2.500$ ,  $z=-1.355$ ,  $p=.18$ , *n.s.* When analysed individually, the only belief that approached significance was “It is not good for children living in residential or foster care to get involved with their caregivers as in the future they will have to leave and they will suffer”; 68% of Secure children had caregivers that Disagreed/Totally Disagreed with this belief, while only 13.6% agreed with it. In contrast, 42.9% of the children classified as Not Secure had caregivers who agreed with this belief  $\chi^2(2, n=57)=5.77$ ,  $p=.05$ ,  $V=.318$ .

**Caregiver’s Motivations.** A chi square test for independence indicated a significant association between the caregiver’s religious/spiritual motivation for fostering and the child’s attachment style, with 72% of the Not Secure children having a caregiver who Agreed or Totally Agreed with that motivation compared to 40.9% of the Secure children,  $\chi^2(2, n=55)=6.93$ ,  $p=.031$ ,  $V=.36$  (medium effect size).

**Caregiver-Child Social Relationship Scale (CCSERRS).** A one-way between groups analysis of variance (ANOVA) demonstrated a significant difference between attachment style *classification* (Secure, Insecure and Disorganised) and mean scores in CCSERRS ( $F(2, 53)=8.72$ ,  $p=.001$ ). The effect size (calculated using eta squared) was .247 (large). Post-hoc comparisons using Gabriel’s test indicated that the mean caregiver-child social relationship score for the Secure group ( $M=2.545$ ,  $SD=.308$ ) was significantly different from both the Insecure group ( $M=2.165$ ,  $SD=.350$ ) and the Disorganised group ( $M=2.155$ ,  $SD=.358$ ). The two latter groups did not differ significantly from each other (see Figure 7.1). Significant differences were also found between the three attachment *classifications* and Caregivers’ Engagement, Responsivity, Child-Directed and Affection (see Table 7.1).

Correlations were conducted to explore the relationship between caregivers’ scores on the CCSERRS and attachment *security scores* in children (see Table 7.2). There was a

medium positive correlation between the variables with high scores in Total, Engagement, Responsivity, Caregiver vs Child-Directed and Caregiver's Affect associated with higher attachment security scores in children.

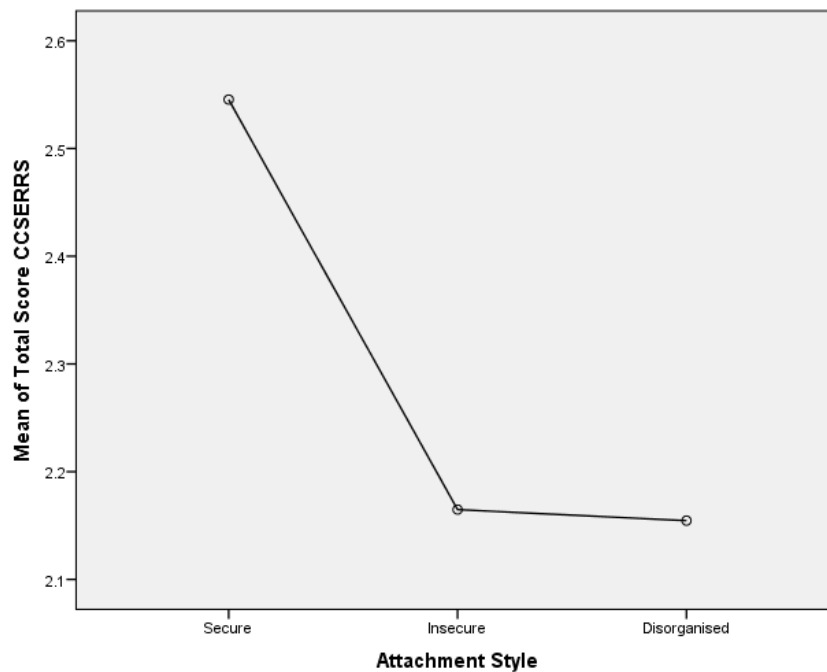


Figure 7.1. Comparison of Total CCSERRS mean scores between attachment *classifications*.

Table 7.1.

*Analysis of variance (ANOVA) between children's attachment classification in Caregivers' CCSERRS subscales*

	Secure		Insecure		Disorgan.		<i>F</i> (2,53)	<i>p</i>	$\eta^2$	Gabriel's
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Engagement	2.61	.38	2.17	.66	1.93	.55	6.566	.003**	.20	S > D, U
Responsivity	2.65	.40	2.33	.56	2.20	.48	3.967	.025*	.13	
Child-Directed	2.25	.47	1.72	.54	1.79	.48	6.943	.002**	.21	S > U, D
Affect	2.63	.41	2.23	.69	1.96	.56	5.959	.005**	.18	S > D, U

\* The Mean difference is significant at  $p < .05$



**\*\*The Mean difference is significant at  $p < .01$  (Bonferroni adjustment)**

Table 7.2.

*Pearson Correlation coefficients between Caregiver's CCSERRS and Attachment **Security** Scores in Children.*

	<i>Rho</i>
Total CCSERRS	.444**
Engagement	.419**
Responsivity	.373**
Caregiver-Directed	.410**
Disciplinary Control	-.113
Affect	.385**

\*\*  $p < .001$  (2-tailed)

### Quality of Care (Structural factors)

***Number of children per caregiver (ratio).*** The number of children per caregiver ranged from 1 to 10 ( $M = 5.62$ ,  $SD = 2.718$ ), differing between RC ( $M = 7.23$ ) and FC ( $M = 2.80$ ). The distribution of the number of children per caregiver across Secure and Not Secure children was explored. A Mann-Whitney U test revealed a significant difference in the number of children per caregiver in the group of children *classified* as Secure (Mean rank = 21.45,  $Med = 6$ ,  $n = 20$ ) and Not Secure (Mean rank = 31.74,  $Med = 6$ ,  $n = 35$ )  $U = 219.000$ ,  $Z = -2.34$ ,  $p = .019$ ,  $r = -.32$  (medium size effect); children classified as having a Not Secure attachment style (i.e., avoidant, ambivalent or disorganised) were more likely to have a caregiver with a high number of children under her care than the Secure children.

Similarly, the relationship between number of children per caregiver and attachment security *scores* was investigated using a Spearman correlation coefficient. There was a medium negative correlation between the two variables,  $\rho = -.34$ ,  $n = 55$ ,  $p = .012$ , with high numbers of children per caregiver associated with low scores in attachment security; this was true both for the whole sample and when analysed separately by type of care.

**Quality of Care (HOME Scores).** Total scores in the HOME inventory ranged from 26 to 57 ( $M = 41.79$ ,  $SD = 8.558$ ), with a slightly higher (which means better quality of care) mean score for FC ( $M = 40$ ) than RC ( $M = 44.86$ ). When the distribution of scores across Secure and Not Secure children was explored, a Mann-Whitney U Test revealed a significant difference in care quality (as measured by the HOME scale) between Secure ( $Md = 47$ ,  $n = 22$ ) and Not Secure ( $Md = 41$ ,  $n = 35$ )  $U = 220.000$ ,  $z = -2.71$ ,  $p = .007$ ,  $r = -.36$  (medium size effect), with higher HOME scores in Secure (Mean rank = 36.50) than in Not Secure children (Mean rank = 24.29).

The relationship between Total HOME scores and attachment security scores was investigated using a Spearman correlation coefficient. There was a small positive correlation between the two variables,  $\rho = .28$ ,  $n = 57$ ,  $p = .036$ , with high scores in the HOME scale associated with high scores in attachment security. This was also true for four subscales: learning materials, language stimulation, responsivity and variety; however, when analysed separately, these variables remained significant only for FC.

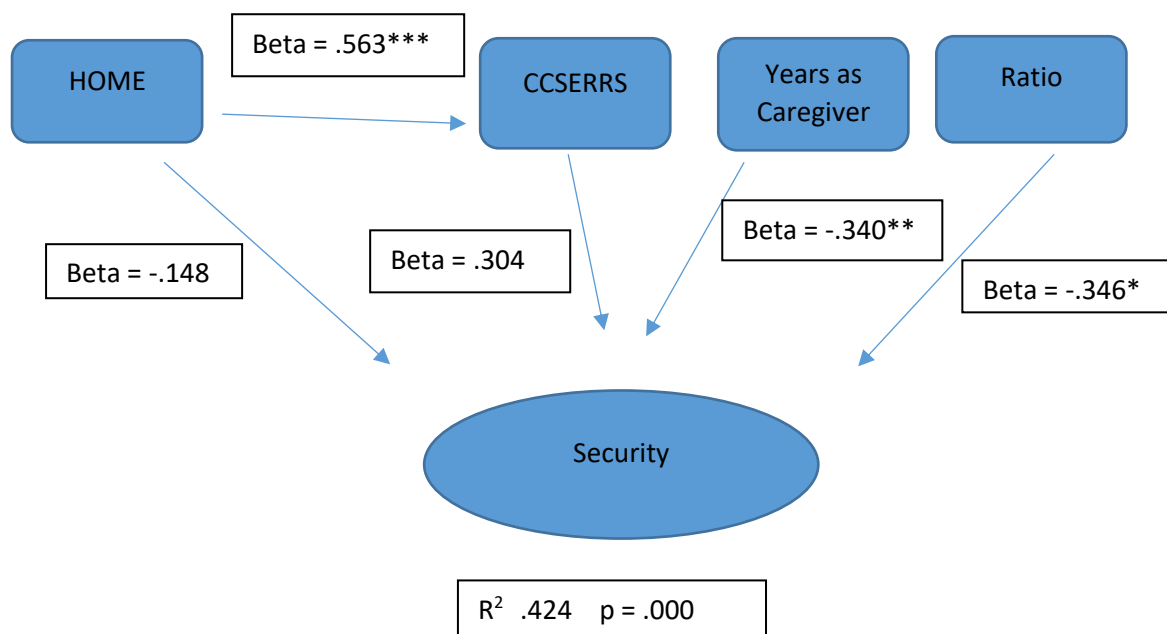
**Integration of factors.** Multiple regression was used to assess the ability of four control measures (Total CCSERRS Scores, Ratio, Total HOME scores and years as a caregiver) to predict security scores in attachment. The total variance explained by the model as a whole was 33.5%,  $F(4, 49) = 6.160$ ,  $p < .001$  (see Table 7.3).

Table 7.3.  
*Multiple Regression Model for Security*

	B	Std. Error	Beta	Sig.
(Constant)	44.574	12.919		.001
Total Score CCSERRS	8.799	4.599	.304	.062
Number of children per Carer	-1.400	.622	-.346	.029
Total Score HOME	-.191	.230	-.148	.410
Years as Carer	-.414	.154	-.340	.010

R Square = .335

Total HOME score made the least contribution to the model ( $Beta = .148$ ); when it was removed the model still explained 32.1% of the variance in attachment security. However, when the relationship between HOME total score and CCSERRS was explored with ANOVA, this variable made a significant contribution to the variance in CCSERRS ( $beta = .563$ ). Thus, the impact of care quality (as measured by the HOME score) on attachment outcome seems to be influenced by the caregiver-child relationship (as measured by CCSERRS; see Figure 7.2).



**Figure 7.2.**  
*Factors affecting security in attachment*

When this model was conducted by type of care separately, it remained predictive for both settings but had a higher predictive value in explaining the variance in attachment security for FC ( $R^2 = .696$ ) than for RC ( $R^2 = .300$ ). The variable with the highest predictive significance for FC was Ratio ( $Beta = -.654, p = .009$ ), while the highest for RC was total

CCSERRS (Beta=.549,  $p=.037$ ). The influence of HOME scores in CCSERRS remained significant for both types of placement.

## Discussion

Given that initial findings from the wider study with children in AC (see chapter 6) found that differences in attachment quality in this Chilean sample could not be explained by type of placement (RC or FC), this paper has attempted to identify factors that do impact on attachment. Several factors can influence the type of attachment a child establishes with his caregivers, and this study has explored the possible influence of some of these factors.

In this study, the only *Children's Factor* linked to secure attachment was the child's current age (with more older children having secure attachments). However, this sample only considered children over three years old; this was due to methodological reasons (i.e., the use of an assessment tool that was friendly for children, could be used in a wide age range and in different contexts allowing to compare groups), while previous studies have shown that there seems to be a crucial cut-off point at 24 months with children placed before that age having secure attachment styles in a higher percentage than those being placed after two years old. Studies with larger samples including younger children may be useful to clarify the influence of this factor in the Chilean population.

Several *Caregivers' Factors* were linked to quality of attachment in this sample. First, children classified as having a Not Secure attachment styles, had caregivers with a higher number of years of experience working as a caregiver. This could be linked with the difficulties of coping with previous experiences of separation and breakdown in placements, which may lead to the decision not to become involved with future children under their care. This has been mentioned in previous studies with caregivers (Garcia Quiroga & Hamilton-Giachritsis, 2016; Garcia Quiroga, Hamilton-Giachritsis, & Ascorra, in submission). It may also be linked with more experienced caregivers treating the relationship with children as a

job, adopting a more routine approach. In the old Chilean system of fostering, carers were called “keepers”, which emphasised providing for the children’s basic needs rather than an affective relationship. This system changed in 2005 when FC was implemented as a formal programme, the name “keeper families” was changed to “foster families”, and legal support was approved by law (Ministry of Justice, 2005).

Caregivers’ beliefs as a whole were not directly linked with quality of attachment in children. However, caregivers who agreed with the belief “it is not good for children in AC to get involved with their caregivers” had children with more insecure attachment scores. This reveals the importance of working with caregivers on the importance of relational bonds with children in AC. Only one of the caregivers’ motivations was associated with insecure attachments (i.e., religious/spiritual), this has been mentioned in a previous study and may be due to more personal and adult-centred motivations, with less focus on the children’s needs.

One of the main caregivers’ factors linked with security of attachment was the quality of the relationship the caregivers establish with children (i.e., engagement, affection, responsivity). These factors were all significantly correlated with secure attachment and reflect the importance of what has been called the ‘micro-caregiving’ environment (Bakermans-Kranenburg et al., 2011).

At a wider level, some structural factors affect the quality of attachment: the number of children each caregiver has under her care seems to be crucial, with larger groups of children experiencing difficulties in establishing a secure attachment, while smaller groups facilitate security. Added to this, care quality as measured by the HOME scale indicates that environments with appropriate levels of stimulation, language stimulation, good learning materials and variety can provide an opportunity for developing nurturing relationships. A good environment on its own is not enough to guarantee secure attachment, but it has an

influence on the relationship and this makes it easier for secure attachments to occur.

Understandably, the greater number of children in the care of one person, the more these opportunities are likely to be reduced. Hence, child-caregiver ratios appear to be a crucial first step, followed by training caregivers in how to stimulate children and develop warm, sensitive relationships.

In summary, the factors affecting attachment security are the number of children each caregiver has to take care of, the relationship this caregiver establishes with each child (i.e., her engagement, sensitivity, affection and disciplinary style) and the years of experience the caregiver has. Care quality as measured by the HOME scale has an indirect effect on attachment security linked to the caregiver-child relationship.

### **Implications and limitations**

Placement in FC or RC by itself does not ensure that the child will or will not establish a secure attachment with the caregiver. Some crucial factors need to be potentiated to ensure the possibility of a reparative experience while living in AC, considering that the child has been placed there after a difficult situation in its own family environment and that emotional damage may exist. Caregivers seem to be crucial figures in this reparatory process; their role can be facilitated by generating high quality of care environments and small groups of children with stable caregivers. Support for caregivers is needed in order to help them to cope with several experiences of separation and loss, and to work with their beliefs about the appropriateness of emotional involvement with the children.

In terms of future research, studies with larger samples are needed in order to explore possible factors associated with the quality of attachment; due to the relatively small sample size of this study, only large size effects could be detected. It is possible that some factors not linked with attachment quality in this study (i.e., number of previous placements, age at

placement, caregiver's training, education and beliefs) may be associated but could not be detected.

The results of this study are based on voluntary participation and can only be generalised to AC settings with similar characteristics; other settings with lower care quality and high child-caregiver ratios may have a negative impact on caregivers' sensitivity and outcomes for children. Children of different ages, especially younger ones, may also have different outcomes, and the factors affecting their attachment quality may also differ from those mentioned here. Caution is needed when generalising results to different countries, and local studies are recommended before the implementation of public policies.

### **Conclusion**

This study highlights the importance of the caregiver's affection and sensitivity as a main contribution to the achievement of a secure attachment in children under her care. This affective relationship can only be possible in a good quality environment with a low number of children per caregiver, appropriate learning materials and level of stimulation. This is true for both RC and FC. Public policies for foster and residential settings need to consider quality of care and the promotion of a nurturing *micro caregiving environment* in order to ensure proper care for children removed from their biological families for protection.